SYLLABUS

1. Course title:

Computer Architecture

2. Code:

RI201

3. Cycle of study:

1

4. ECTS credits:

6

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

[RI101] Introduction to Programming

7. Class restrictions:

8. Duration / semester:

1 4

9. Weekly contact hours:

9.1. Lectures:	3
9.2. Seminars:	1
9.3. Laboratory/Practice classes:	1

10. Faculty:

Faculty of Electrical Engineering

11. Department/study program:

Electrical Engineering and Computer Science

12. Lecturer:

Ph.D. Amer Hasanović, full professor

13. Lecturer's e-mail:

amer.hasanovic@untz.ba

14. Web site:

15. Course aims:

After completing the course the students will understand the basics of computer organization, particularly the role and function of the CPU, various types of memory, and peripherals. The students should be able to write programs in the MIPS assembly language and have a basic understanding of how programs written in the C high-level language are turned into machine-executable instructions for the MIPS processor.

16. Learning outcomes:

After completing the course the students will understand the basics of computer organization, particularly the role and function of the CPU, various types of memory, and peripherals. The students should be able to write programs in the MIPS assembly language and have a basic understanding of how programs written in the C high-level language are turned into machine-executable instructions for the MIPS processor.

17. Course content:

Computer architecture introduction. MIPS assembly language programming. Arithmetic, signed and unsigned integers, floating point numbers. Binary object code generation. Linking object code. CPU datapath and control. Single-cycle and multi-cycle CPU implementation. Pipeline. Memory, registers, and caches. I/O: Interrupts.

18. Learning methods:

Lectures, auditive exercises, individual work of students on homeworks and projects.

19. Assessment methods:

The final grade is based on the continuous assessments, which are performed throughout the semester with quizzes and a midterm test, and the final exam, which includes the questions related to the entire content of the course, focusing on the areas that are not covered by the midterm test.

20. Assessment components:

Pre-exam activities: 75%
Final exam: 25%
The final grade is formed in accordance with the Studying regulations based on the points obtained through continuous assessment during the semester (homeworks, tests) and the final exam.

21. Required reading list:

A. Hasanović, E. Pjanić, S. Fehrić, MIPS procesor iz perspektive GNU asemblera, Hamidović, 2015
D.A. Patterson, J.L. Hennessy, Computer Organization and Design: The Hardware/Software Interface, Morgan Kaufmann

22. Web sources:

23. Applicable starting from the academic year:

2016/2017

24. Adopted in the Faculty/Academy session:

04.04.2016